

all the principal types of birds, and indicates the possibilities of using characters drawn from these structures in the systematic arrangement of the class Aves.

Dr. Wood is to be congratulated upon his success in securing such a representative lot of material and such splendid results — a task which must have required much time and patience, as well as upon providing for ornithologists a work of reference on a subject upon which very few have had any accurate knowledge. The value of Dr. Wood's researches to ophthalmology must also be very great and his work furnishes another instance of the praiseworthy tendency of modern medical research to carry investigation beyond the human subject through the lower types of vertebrates.

The publishers have done their part of the work well and both plates and text are beautifully printed. The only regrettable feature is the lack of an index which would have enabled the reader to bring together scattered information dealing with single topics.— W. S.

Mathews' 'The Birds of Australia.'¹—Two thick parts of Mr. Mathews' great work have appeared since the last notice in these columns. While the paper and typography remain fully up to the high standard that the publishers have set, we think that some of the recent plates are not equal to those of the early numbers. The parrots which furnish the subject matter of these last two parts present a gorgeous array of species and the plates are among the most brilliantly colored of any that the work will contain.

The text is very full and as usual is devoted largely to a discussion of questions of nomenclature and taxonomy. We feel sometimes that the author would have made his points clearer if he had condensed his discussion, for in his praiseworthy efforts to present all the evidence to the reader, he has reprinted large sections from his previous publications which sometimes tend to confuse, especially when double sets of quotation marks are used as on page 234, where it looks at first sight as if some of the quoted "subsp. n." appeared here for the first time.

The accounts of the various species are based upon the observations of Mr. Mathews' correspondents in Australia as well as upon published accounts and appear to bring the subject fully up to date. The frequent allusions to former abundance and present day scarcity among these splendid birds will be read with regret by all who peruse Mr. Mathews' pages.

As to matters of nomenclature, those who enjoy delving into puzzling problems will find plenty to occupy their attention in the parts before us. The discussion under the genus *Kakatoë* is particularly interesting. The A. O. U. Committee on Nomenclature some years ago adopted certain

¹ The Birds of Australia. By Gregory M. Mathews. Vol. VI. Part II, February 6, 1917. Part III, April 17, 1917.

generic names from Cuvier's 'Leçons d'Anat. Compt.,' 1800. This action has lately been endorsed by the International Commission which necessitates the recognition of certain other names from the same source which do not figure in North American ornithology, and which had therefore not been taken up by the A. O. U. Committee. Among these is *Kakatoë* the type of which Mr. Mathews fixes as *Psittacus galeritus* Lath., and which he adopts in place of the later *Cacatoës* of Dumeril which he had previously used and for which he had selected the same species as type. Recently he has discovered that Froriep years before had selected as the type of *Cacatoës*, *Psittacus cristatus* a species which some authors have considered unrecognizable. Now if these two generic names are regarded as simply different spellings of the same word the question arises whether Froriep's designation of a type for the later one does not force us to accept the same type for the earlier one; in which case both may have to be rejected as based upon an unidentifiable species. Mr. Mathews thinks not, and we agree with him, but in order that the group, to which *galeritus* belongs will be sure to have a name he proposes *Eucacatua* for it, with the rather unique remark: "My name will become a synonym if my conclusions be accepted, but will come into use if they are rejected" !

Another of these early Cuvierian names is *Psittacula* which as used in the 'Leçons' has for its type '*Palæornis*' *alexandri*. *Conurus*, as has been pointed out for some time, must also be applied to the same group and being of earlier date than *Palæornis* has been used in place of it by some recent authors. Now however, we have the still earlier *Psittacula*, which as Mr. Mathews points out, must be employed for these birds, while the group for which it was formerly used will be known as *Forpus* Boie 1858. Mr. Mathews has made one change to which especial attention might be called, i. e. the name *Callocephalon* which has been variously emended into *Callicephalus*, *Callocephalum* etc., is rejected on account of an earlier *Calocephalus*. While we think that this is in accord with the A. O. U. Code we have been unable to find that the International Commission has as yet taken any action on the vital question of the status of emendations and variant spellings. We therefore are at a loss to understand Mr. Mathews' statement; "The International Commission have decided upon the item, 'errors of transliteration' in the recognition of their amendment." Has he not confused proposed amendments with those actually adopted?

Among the several questions of taxonomy that are discussed in the present installments of the work is one regarding the status of the genus *Ducopsius*. According to Mr. Mathews it is exactly like *Licmetis* in every detail of structure and coloration, except for the longer bill of the latter, and he therefore thinks that the two should be united.

The difference in the bill, if constant, might easily we think be sufficient ground for generic separation but a far more important argument for uniting the two is found in the text under *Licmetis tenuirostris*, i. e. the admission that a race referred by Mr. Mathews to *Ducopsius sanguineus*, "might be almost as well classed as a subspecies of *Licmetis tenuirostris*."

This seems to show that the relative size of the bill is not a constant difference.

We had occasion to criticise the brevity of some of Mr. Mathews' diagnoses in former parts of his work, and the general lack of measurements. He says in reply to this criticism (p. 148) "if I gave pages of measurements, as is the custom of my American friends, it would not prejudice any worker in favor of my subspecific forms," and adds, "the work [of measuring] must be done, but the results only are necessary, not the methods whereby the results were achieved." Mr. Mathews seem to have misunderstood our criticism. We did not demand all the individual measurements, we quite agree with him on that point. What we did demand were measurements of *some* sort, either averages or those of a typical individual, in all cases where relative size is taken as the basis for subspecific differentiation. In the present numbers of the work there are a gratifying number of measurements.

The following new forms are proposed in the two parts before us. In Part II: *Calyptrorhynchus banksii samueli* (p. 120), Cent. Austr.; *Callocorydon fimbriatus superior* (p. 158), N. S. Wales; *Kakatoë galerita interjecta* (p. 184), Victoria; *K. g. aruensis* (p. 187), Aru Isl.; *Lophochroa leadbeateri superflua* (p. 196), S. Australia; *Ducorpsius sanguineus westralensis* (p. 211), Mid-west Australia; *D. s. normantoni* (p. 211), Queensland.

Also the following new genera: *Callocorydon* (p. 150), type *Psittacus fimbriatus* Grant. *Eucacatua* (p. 169), type *Psittacus galeritus* Lath.

In Part III: *Eolophus roseicapillus howei* (p. 234), Victoria; and the new genus *Layardella* (p. 289), type *Psittacus tabuensis*. This takes the place of *Pyrrhulopsis* Reich. which is based upon an unidentifiable figure of the head of a parrot.—W. S.

Matthew and Granger on Diatryma.¹—Mr. William Stein of the American Museum's Paleontological Expedition of 1916, was fortunate enough to discover a nearly complete skeleton of this remarkable bird previously known only from a few fragments obtained by Prof. E. D. Cope in 1874, in the Wasatch formation of New Mexico, and some others obtained in the Eocene of Wyoming, in 1911, by Mr. Granger. A single toe bone from the Eocene of New Jersey described by Prof. Marsh as *Barornis regens* has been referred to the genus by Dr. Shufeldt, but is regarded by the present authors as "practically indeterminate."

For the first time therefore we are able to determine what this extinct bird looked like and what are its relationships. It was about seven feet in height, ground-living, with vestigial wings, and with a shoulder girdle remarkably like that of the Cassowary. The resemblance to the Ratite birds is however considered by the authors to be due to parallelism and

¹ The Skeleton of Diatryma, a Gigantic Bird from the Lower Eocene of Wyoming. By W. D. Matthew and Walter Granger. Bull. Amer. Mus. Nat. Hist., Vol. XXXVII, Art. XI, pp. 307-326. May 28, 1917.